Radio Frequency Identification (RFID)

Presented By:

DCMAC-JP

Revision 3.0 dated July,2007

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AGENDA

- RFID Description
- DOD RFID Policy
  - Active Tags
  - Passive Tags
    - Tag data constructs
- Contract Requirements
- MIL-STD-129P with Change #3 (or #4)
- RFID data submittal
- Strategies for supplier implementation

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What is RFID?

- **RFID is an Automatic Data Capture (ADC) technology that uses radio-frequency waves to transfer data between a reader and a movable item to identify, categorize, track…**

- **RFID is fast, reliable, and does not require physical sight or contact between reader/scanner and the tagged item**

Basic Components

- **There are five basic components that make up an RFID System**
  - **One or more RF transponders (tags)**
  - **Two or more antennas**
  - **One or more interrogators**
  - **One or more host computers**
  - **Appropriate software**

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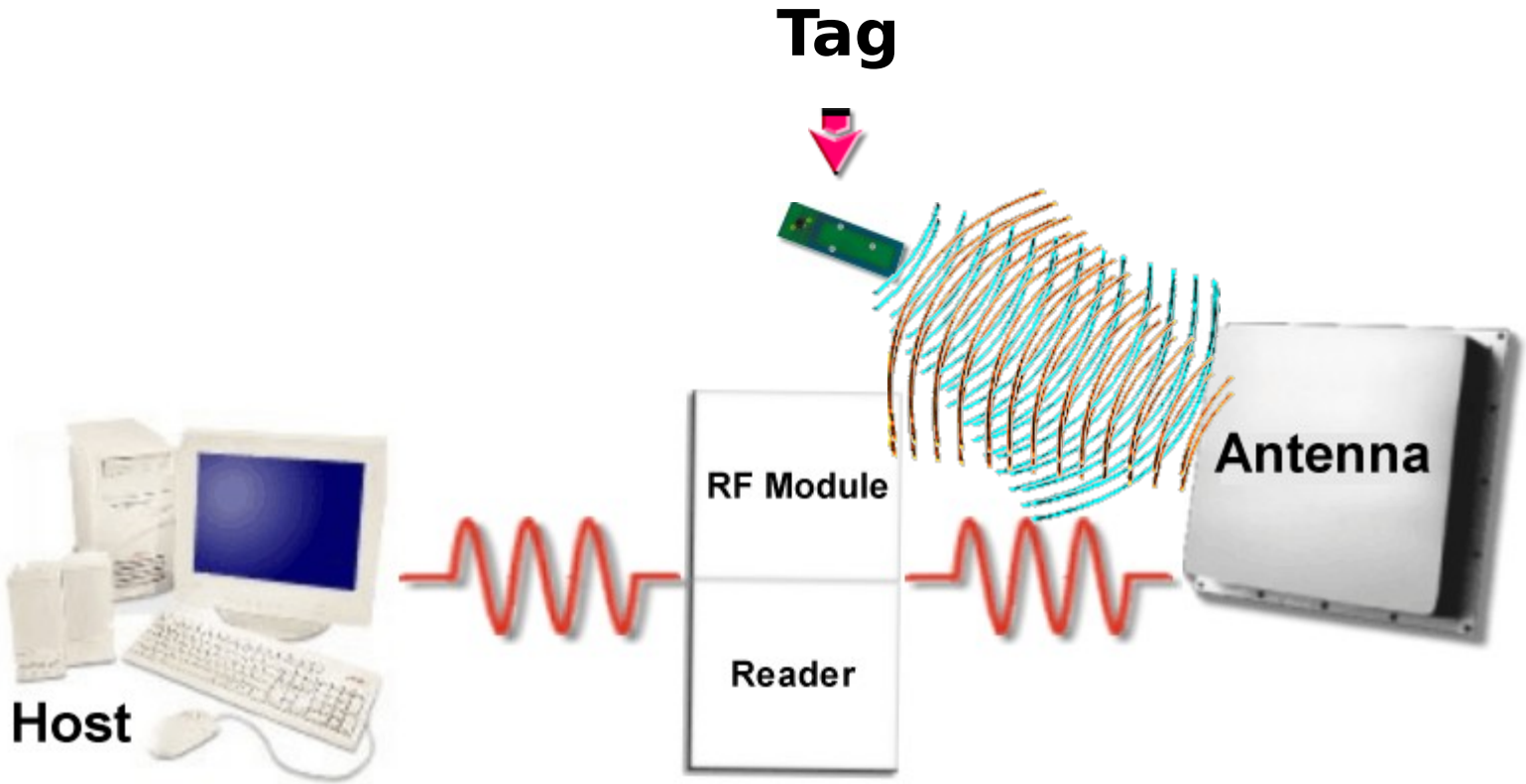
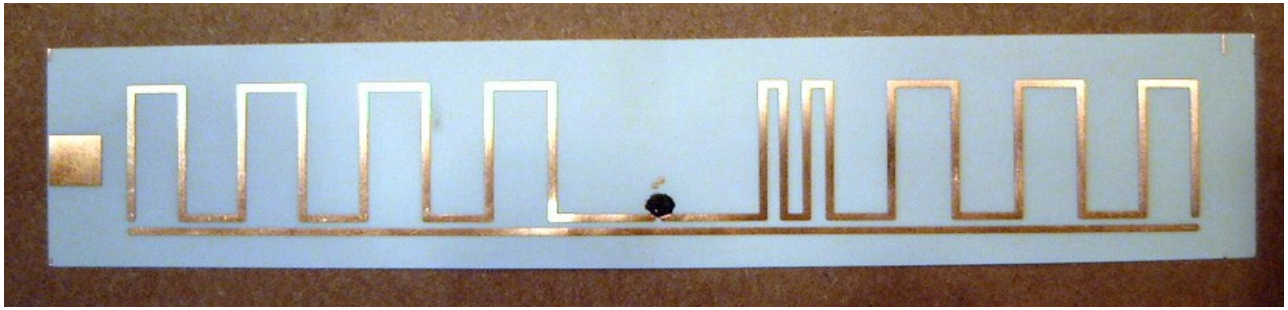
RFID Operations



How Does It Operate?



- RFID tags are affixed to objects and stored information may be written and rewritten to an embedded chip in the tag
- Tags can be read remotely when they detect a radio frequency signal from a reader over a range of distances
- Readers (Interrogators) then either send tag information over the network to computer systems for processing or display it to the end user

RFID Tags

Tags carry data and can be attached to:

- **Items**
- **Shipping Containers**
- **Pallet Loads**
- **Transport Containers – Seavans**

There are primarily two categories of RFID tags on the r

- **Active Tags**
- **Passive tags**

Active Tags

Powered by an internal battery
Battery life ~ 5 years

Can hold large amount of data (128k programmable)

Read/write—tag data can be rewritten or modified

Longer read range – up to 300 feet

Greater cost ($100's) and size (brick)

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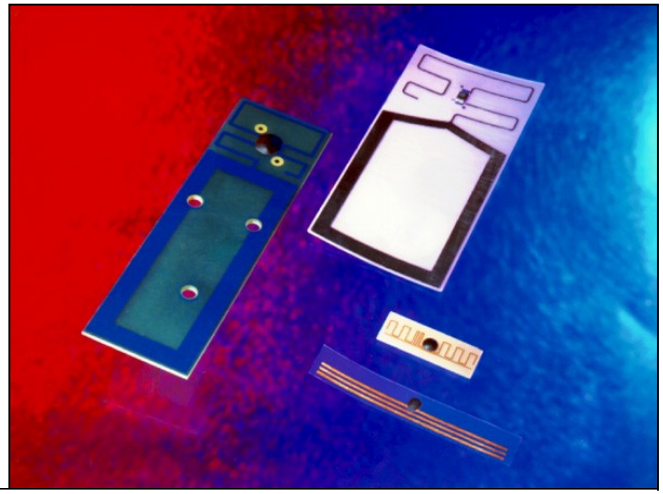
Passive Tags

Obtain operating power from a high powered reader



Limited amount of data can be encoded

(64 or 96 bit)

Read-only tags; programmed with a unique set of data that cannot be modified or can also be Read/Write

Lightweight, smaller, less expensive, virtually unlimited lifetime

Shorter read ranges (about 10 feet)

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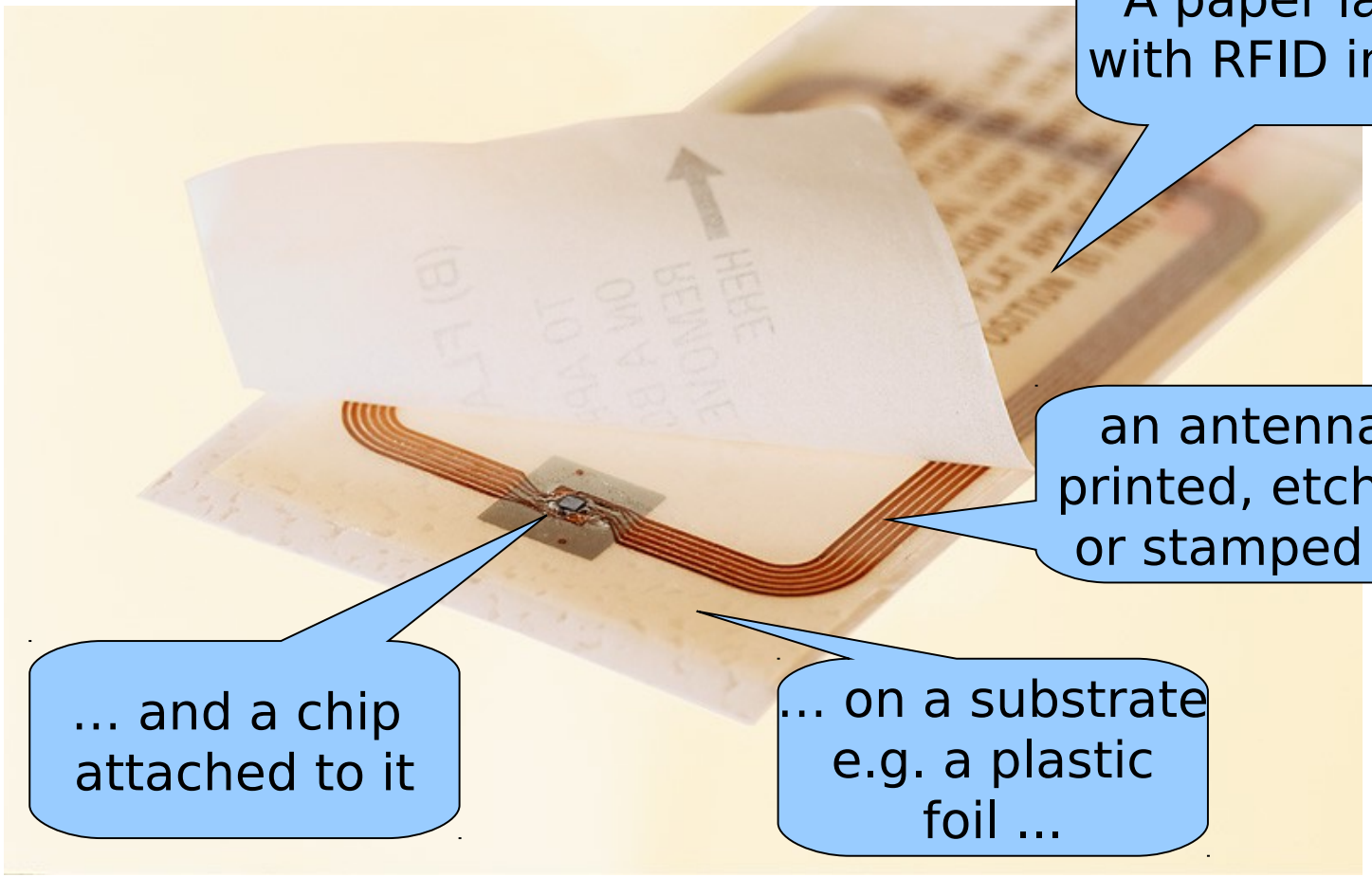
RFID Enabled Label


A paper label with RFID inside
an antenna, printed, etched or stamped ...
... and a chip attached to it
... on a substrate e.g. a plastic foil ...

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WHY RFID?

DOD RFID Policy—Active Tags

- **These rules apply to DoD cargo shipped outside the Continental United States (OCON**

- **Applied to all freight containers and 463L consolidated air pallets and major organizational equipment**

- **Applied at the point of origin by all activities—including vendors and contractors**
  - **It is the responsibility of the procuring Service/Agency to arrange for the vendor to apply active tags – either by:**
    - **Obtaining sufficient RFID equipment to provide the vendor or**
    - **Requiring the vendor to obtain necessary equipment to meet the DoD requirement as a term of the contract**

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Active RFID in the Field Today

Contractor Active RFID Shipment

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Contractor Active RFID Shipment

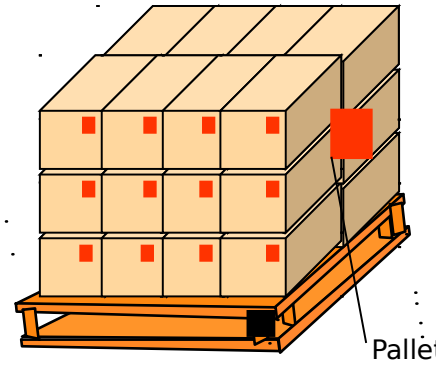
DOD RFID Policy— Passive Tags

- **<u>Phase 2</u> (Current) - Passive RFID tags on cases and pallets shipped to specified DoD receiving points, including all the Defense Distribution Depots, for the following item supply classes:**
  - **<u>Class I</u> -** Subsistence limited to Packaged Operational rations
  - **<u>Class II</u> -** Clothing, individual equipment, tentage, organizational tool kits, hand tools, and administrative and housekeeping supplies and equipment
  - **<u>Class IIIP</u> –** Packaged petroleum fuels, lubricants, hydraulic and insulating oils, preservatives, liquid and gas, bulk chemical products, coolants, de-icer and antifreeze compounds, components and additives of petroleum & chemical products & coal
  - **<u>Class IV</u> -** Construction materiel including installed equipment and all fortification and barrier materiel
  - **<u>Class VI</u> -** Personal demand items such as snack foods, beverages, cigarettes, soap, toothpaste, writing materiel, cameras, batteries, and other nonmilitary sale items
  - **<u>Class VIII</u> -** Medical Materials (except Pharmaceuticals, biologicals, and reagents)
  - **<u>Class IX</u> -** Repair parts and components including kits, assemblies and subassemblies, reparable and consumable items required for maintenance support of all equipment, excluding medical-peculiar repair parts

Current Passive RFID Ship to Locations

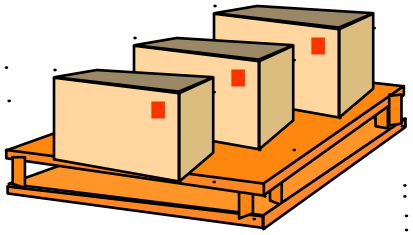
- **DLA Defense Distribution Depots**
  - Albany, GA
  - Anniston, AL
  - Barstow, CA
  - Cherry Point, NC
  - Columbus, OH
  - Corpus Christi, TX
  - Ogden, UT
  - Jacksonville, FL
  - Oklahoma City, OK
  - Norfolk, VA
  - Puget Sound, WA
  - Red River, TX
  - Richmond, VA
  - San Diego, CA
  - Susquehanna, PA
  - San Joaquin, CA
  - Tobyhanna, PA
  - Warner Robbins, GA
- **TRANSCOM Air Mobility Command Terminals**
  - Charleston, SC
  - Norfolk, VA
  - Fairfield, CA (Travis AFB)

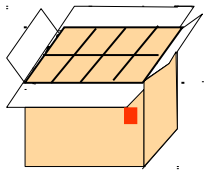
Implementation Level of Tagging – Phase 2



Palletized Unit Load Tag

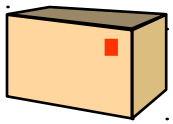
YES





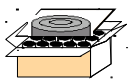
Exterior Container

YES



Shipping Container

YES



UID Item Unit Pack*

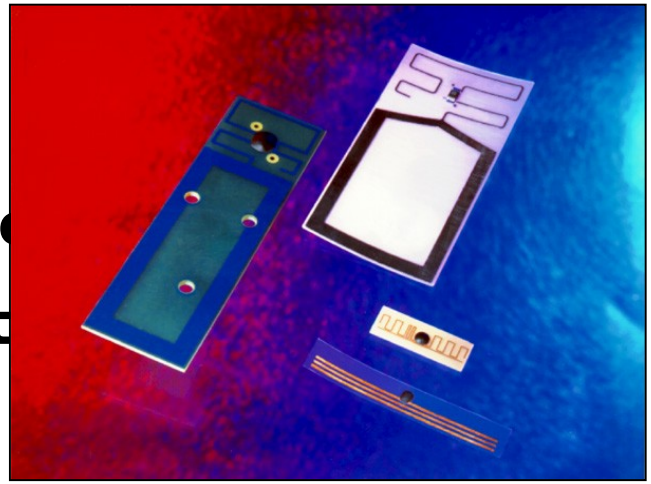
NO

*If the UID Packaging is also an External Container or a Shipping Container, it will have an RFID tag.

DOD RFID Policy— Passive Tags

- **Phase 3 - Passive RFID tags on all cases and pallets shipped to any DoD location for all commodities* and unit packs for items that require a Unique Identification (UID)**
  - **except items excluded unde**

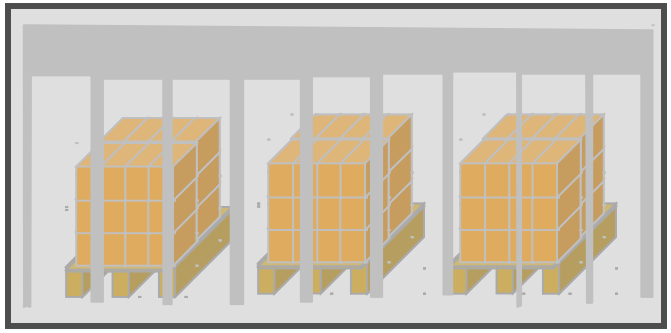
the bulk commodities definit



Active & Passive Tag Association

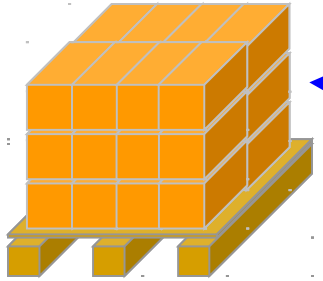
Active Container Tag

associated to a…



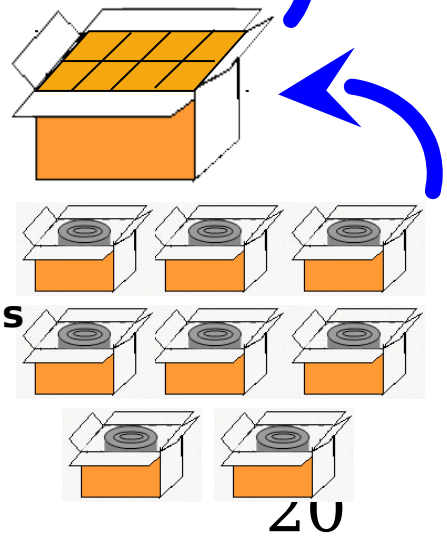
Passive Pallet Tag

associated to a…



Passive Carton Tag

associated to …



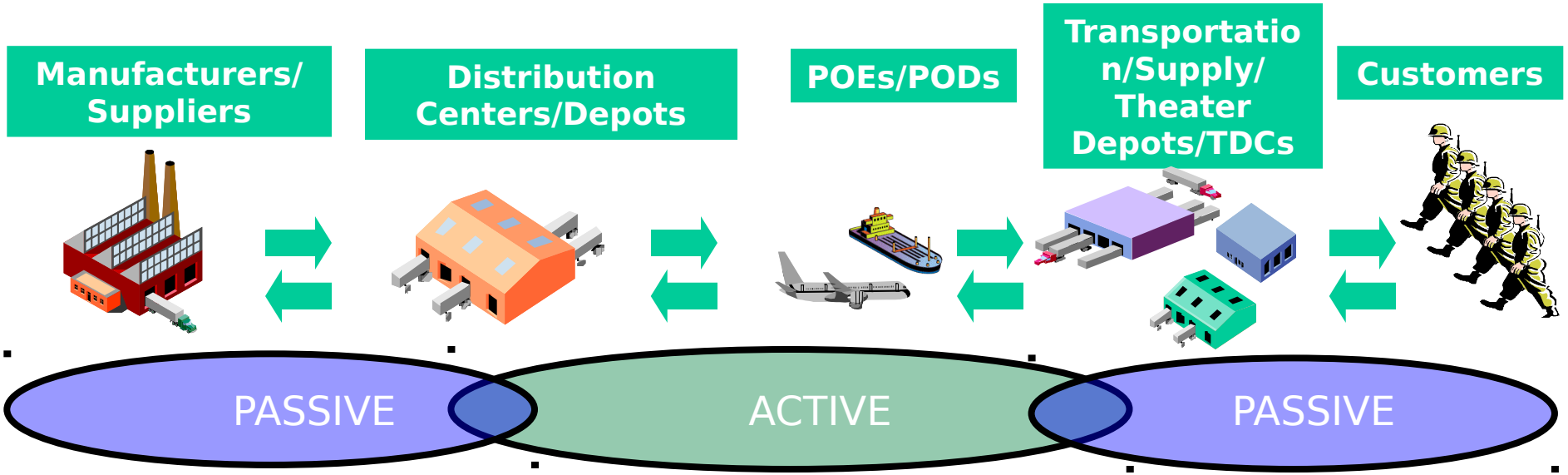
8 UID Packaging Tags

each with 1

associated

UID item

Active & Passive Tag Relationship



DOD RFID Policy—Passive Tags

- **Passive RFID technology is evolving…**
- **EPCglobal published standards on EPC Class 0 and Class 1, V1**
  - **Class 0 – read only**
  - **Class 1, V1 – write once, read many (worm)**
  - **“Generation 2” – latest and most evolved standard for Class 1 tags. Now mandatory for DOD shipments.**
- **DoD accepts the EPC data identity type**
  - **Contractors can use the DoD tag identity type.**
  - **Suppliers must ensure tag identification uniqueness.**

Passive RFID Tag Data

- **A unique serial number for each exterior container or pallet load**
  - **Each RFID tag is like a small license plate which carries the serial number associated with the container or pallet load.**
  - **Fields used for the DOD tag identity type are: Header, Filter, DODAAC/Cage Code and a Serial Number unique to the shipping activity.**
  - **The contractor will provide the shipment data via WAWF. This will relate each serial number to the items in each package.**

DoD Tag identity type for 96 bit Class 1 tag

96 bits total user memory on tag			
Header	Filter	DODAAC/CAGE	Serial number
8 bits	4 bits	48 bits	36 bits

Fields:

- Header – specifies that the tag data is encoded as a DoD 96-bit tag identity type (use “2F” encoded in binary as 0010 1111).
- Filter – identifies a pallet, case, or UID item associated with tag.

(0000 = pallet, 0001 = case, 0010 = UID item, all other combinations = reserved for future use)

- DODAAC/CAGE – identifies the supplier, insures uniqueness of serial number across all suppliers, represented in ASCII format. For CAGE codes an ASCII space character must be placed in front of the CAGE to make a total of 6 ASCII characters
- Serial Number – uniquely identifies up to 2^{36} = 68,719,476,736 tagged items, represented in binary format.

DoD Tag identity type for 96 bit Class 1 tag

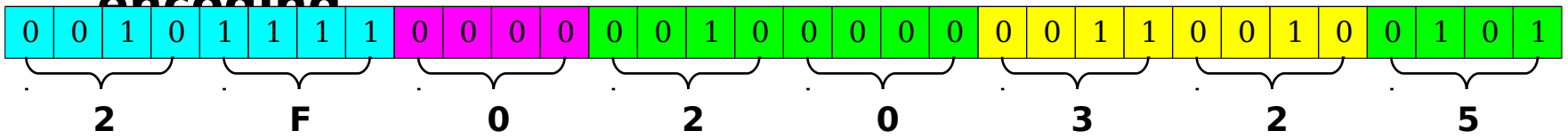
Header (DoD identity type)	0010 1111
Filter (pallet)	0000
CAGE (2S194)	0010 0000 0011 0010 0101 0011 0011 0001 0011 1001 0011 0100
Serial Number (12,345,678,901)	0010 1101 1111 1101 1100 0001 1100 0011 0101

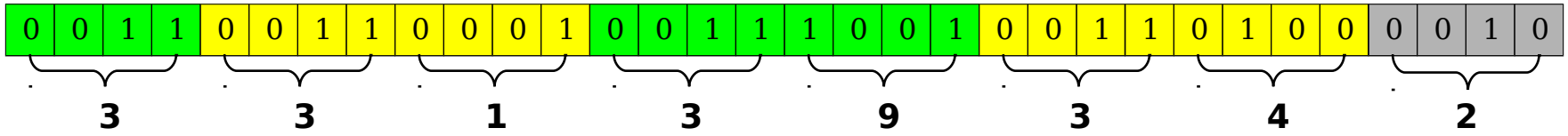
0010 1111 00000010 0000 0011 0010 0101 0011 0011 0001 0011 1001 0011 01000010 1101 1111 1101 1100 0001 1100 0011 0101

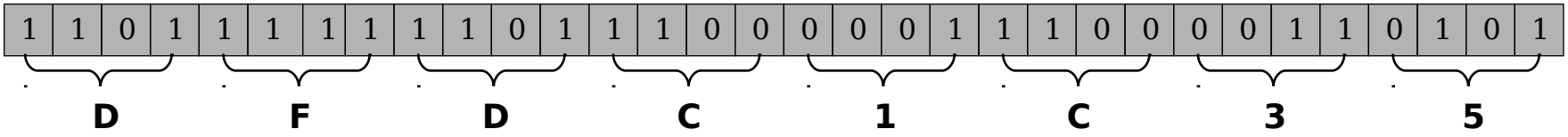
DOD Tag 96 Bit Identity Type Data

DoD Tag identity type for 96 bit Class 1 tag

RFID software converts the 96-bit binary (base 2) number into hexadecimal (base 16) format for encoding







The result is a unique hexadecimal number that can be written to the tag: **2F02032533139342DFDC1C35.** This number will be entered into WAWF.

CONTRACT REQUIREMENTS

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Who is affected by Passive RFID?

ALL DOD suppliers of ALL material and goods purchased by the Department (very limited exceptions)

- **Requirements are being phased in depending upon the class of material and the destination of the shipment**
- **Excludes bulk commodities and non-depot shipments using Fast Pay**
- **Note: There is no cost threshold with RFID requirements (unlike UID). Even low dollar value contracts will require RFID**

CONTRACT REQUIREMENTS

- **DFARS Clause 252.211-7006 incorporating Phase 2 RFID requirements was published as an interim rule on May 19, 2006. The final clause was published on February 12, 2007.**
- **Requirements of the latest, final rule**
  - **Additional Item Supply Classes**
  - **Additional destinations**
  - **As of 1 March 2007, RFID tags must conform to EPC Class 1, Generation 2 tags**

CONTRACT REQUIREMENTS

- **Phase 2 RFID required when all three conditions exist:**
  - **The RFID clause is in the contract (or referenced)**
  - **Items are Class I (Rations), Class II, Class IIIP, Classes IV and VI, Class VIII (excluding pharmaceuticals, biologicals or reagents), or Class IX, AND**
  - **Destination is: Defense Distribution Depot, Susquehanna, PA: DODAAC W25G1U or SW3124; Defense Distribution Depot, San Joaquin, CA: DODAAC W62G2T or SW3224; Defense Distribution Depot, Albany, GA: DODAAC SW3121; Defense Distribution Depot, Anniston, AL: DODAAC W31G1Z or SW3120; Defense Distribution Depot, Barstow, CA: DODAAC SW3215; Defense Distribution Depot, Cherry Point, NC: DODAAC SW3113; Defense Distribution Depot, Columbus, OH: DODAAC SW0700; Defense Distribution Depot, Corpus Christi, TX: DODAAC W45H08 or SW3222; Defense Distribution Depot, Hill, UT: DODAAC**

CONTRACT REQUIREMENTS

- **Defense Distribution Depot, Jacksonville, FL: DODAAC SW3122; Defense Distribution Depot, Oklahoma City, OK: DODAAC SW3211; Defense Distribution Depot, Norfolk, VA: DODAAC SW3117;**

  Defense Distribution Depot, Puget Sound, WA: DODAAC SW3216; Defense Distribution Depot, Red River, TX: DODAAC W45G19 or SW3227; Defense Distribution Depot, Richmond, VA: DODAAC SW0400; Defense Distribution Depot, San Diego, CA: DODAAC SW3218; Defense Distribution Depot, Tobyhanna, PA: DODAAC W25G1W or SW3114; Defense Distribution Depot, Warner Robins, GA: DODAAC SW3119; Air Mobility Command Terminal, Charleston Air Force Base, Charleston, SC: Air Terminal Identifier Code CHS; Air Mobility Command Terminal, Naval Air Station, Norfolk, VA: Air Terminal Identifier Code NGU; Air Mobility Command Terminal, Travis Air Force Base, Fairfield, CA: Air Terminal Identifier Code SUU.

- **OR a location outside the contiguous US when the shipment has been assigned Transportation Priority**

DFARS 252.211-7006 Details

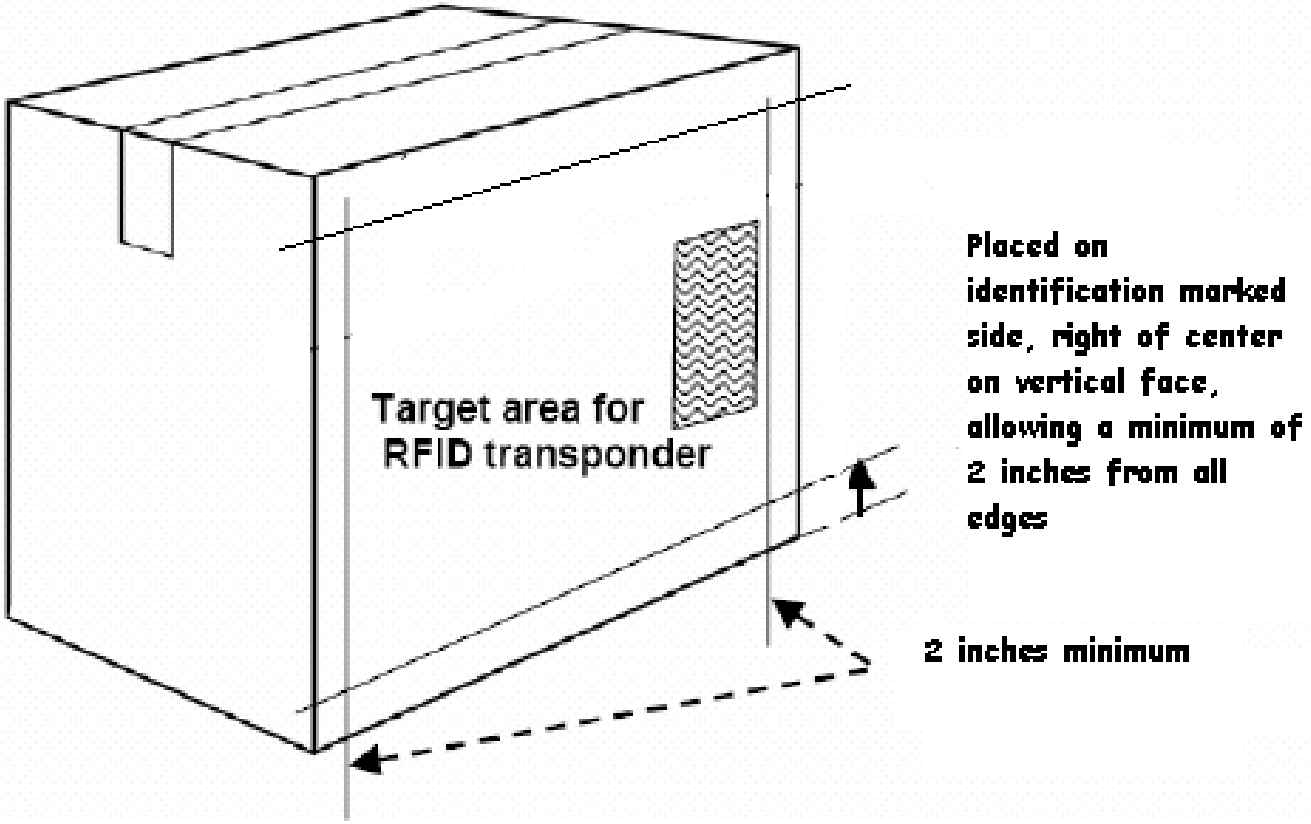
- **Two Major Requirements for Suppliers**
  - **Passive Tagging at the case, pallet, and case within a pallet load**
  - **Advance Shipment Notification (ASN)**
- **Definitions of levels of tagging are included (in accordance with MIL-STD 129 Definitions)**
  - **Case – Shipping Container and/or Exterior Container**
  - **Pallet – Palletized Unit Load**
- **Tag Data Standards – EPCglobal or DoD Identity Type**
- **EPCglobal Class 1, “Generation 2” Specification Tags**
- **Tag Placement – Per MIL-STD-129 Section 4.9.2**
- **DoD has published guidance on tag identity types and advance shipment notification at: www.dodrfid.org**

MIL-STD-129P Change 3 or 4

- **Specifying MIL-STD-129P, Change Notice 3 or 4 in a contract is not sufficient to mandate RFID on a shipment. The RFID DFARS clause in the contract triggers the requirement (along with the Item Supply Class and the destination).**
- **Newly added definitions specific to RFID**
  - **463L Pallet System – Intended to differentiate between a standard palletized load and the 463L pallets used for air transport**
  - **Electronic Product Code (EPC) – An identification scheme for universally identifying physical objects via radio frequency**
  - **RFID – Automatic identification and data capture technology in which data transfer is achieved by means of radio waves**

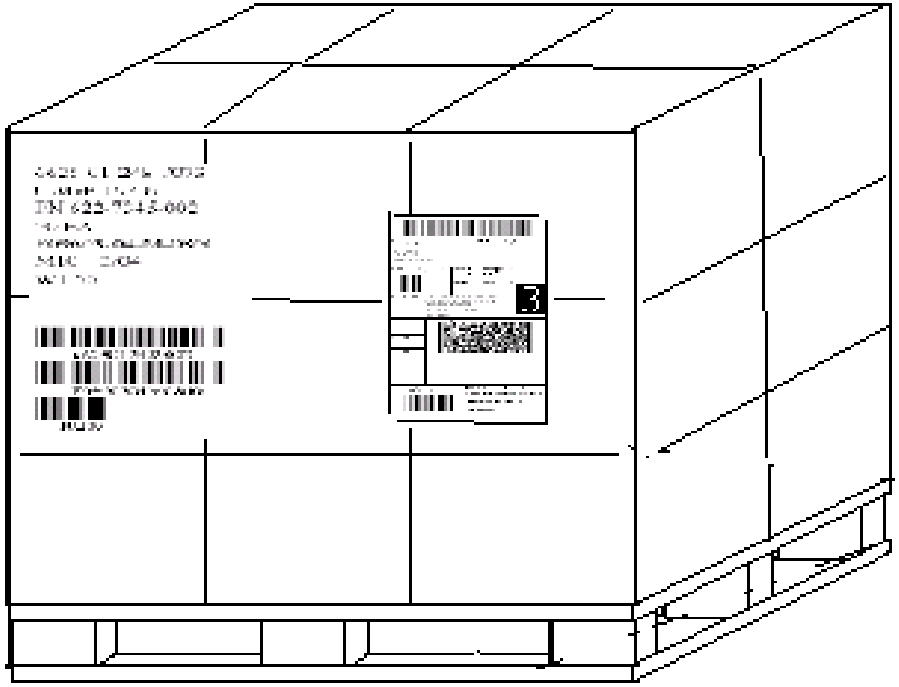
RFID Tag Placement

- **Passive RFID tags may be integrated into the MSL**
- **Placement of RFID enabled address labels or separate**


Target area for
RFID transponder
Placed on identification marked side, right of center on vertical face, allowing a minimum of 2 inches from all edges
2 inches minimum

RFID Tags on Pallet Loads

- **Address labels may be attached to the marking board or to the stretch wrap if used to bond the load**
- **Individual cases that make up the pallet load require their own passive RFID tags**



The RFID-enabled label for a palletized unit load should not be attached to an exterior container if the cargo within the exterior container will not be removed for receipt processing and storage

The RFID label should not be placed in a manner that overlaps any other existing RF transponder. There should be at least a 4 inch separation.

Advance Shipment Notice

- **Advance Shipment Notice (ASN) via Wide Area Workflow (WAWF).**
- **Information that describes contents & configuration of a shipment:**
  - **Contract information**
    - **Contract Number, Shipment Number**
    - **Prime Contractor, Shipment**
  - **Product description**
    - **Line Item Number, NSN**
    - **Item Description, Quantity**
  - **RFID Tag Data**
    - **RFID Tag Number**
    - **Line Item Number**
    - **Quantity**

Wide Area Workflow (WAWF)

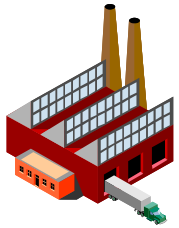
Information and registration at:

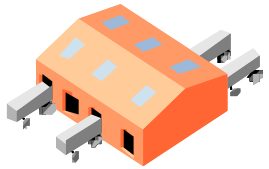
Advance Shipment Notice

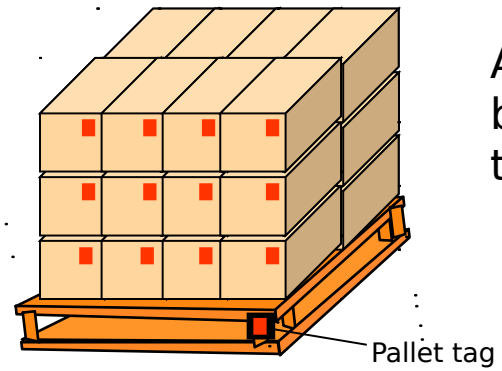
Advance Shipment Notice

- EDI Manifest Transaction Set 856
- UDF/FTP
- Web page form

Manufacturers/ Suppliers → **WAWF** → **Distribution Centers/Depots**







Advance Shipment Notice 856 will be a transportation based transaction.

- Pallet
- External Container
- CLINs

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RFID Depot Receipt

D Receiving Portal at Defense Depot Susquehanna, PA

Handheld/RFID Barcode reader

RFID Tag Data: How is it Constructed? What number do I send?

DoD 96-bit Tag Construct

DoD Header	= 96-bit Identifier
Level of Packaging	= Pallet
CAGE Code	= 2S194
Serial Number	= 12,345,678,901

The DoD Construct consists of: DoD Header, Filter, CAGE, & Serial #

DoD 96-bit Tag Construct - Binary

DoD Header Value	= 00101111
Filter Value (Level)	= 0000
Cage Code	= 001000000011001001010011001100010011100100110100
Serial Number	= 00101101111111011100000111000011010 1

The fields of the construct are all combined together to create a single unique, binary format number which is burned to the RFID tag.

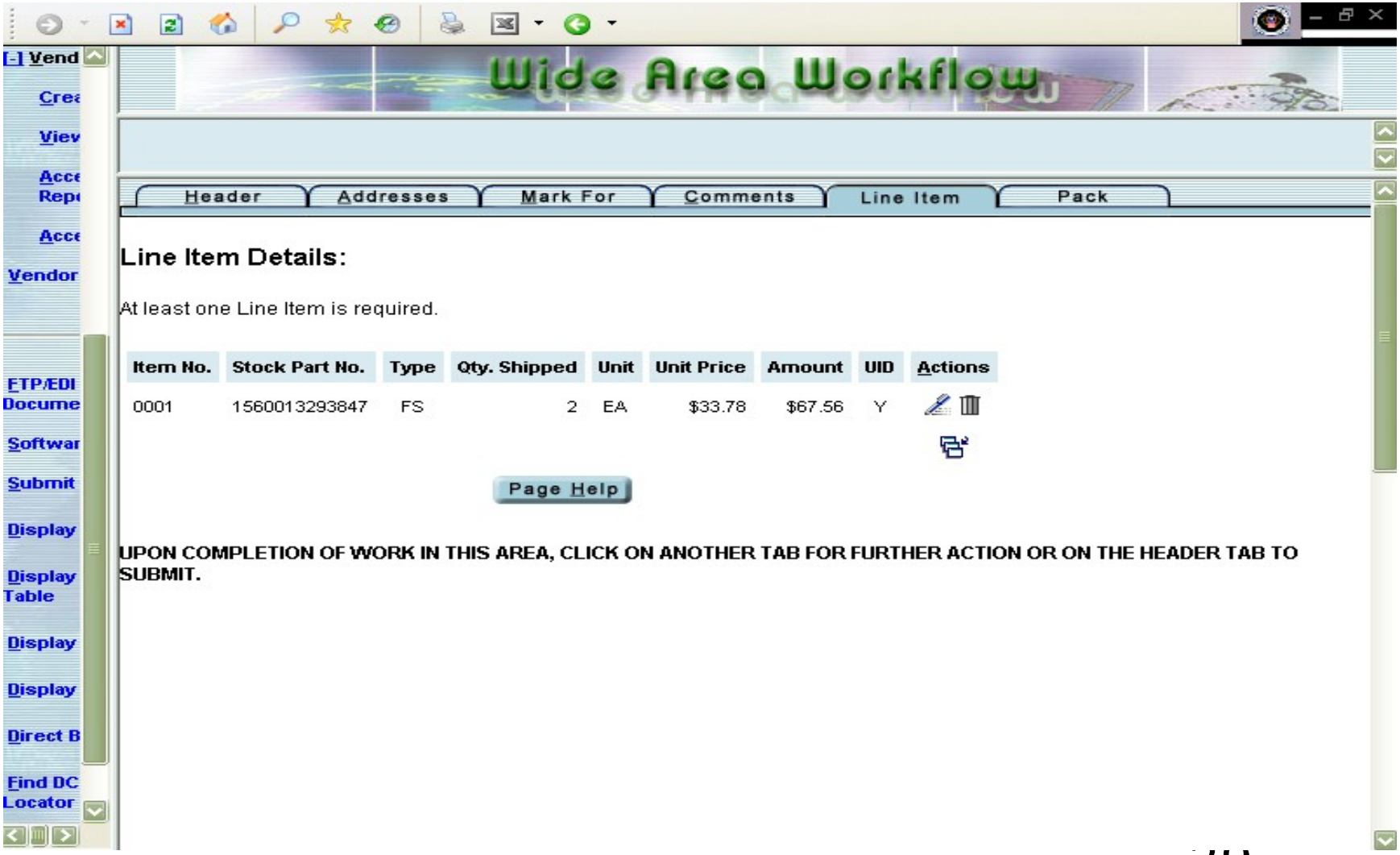
COMPUTER GENERATED

DoD 96-bit Tag Construct – Hexadecimal

DoD Header Value	= 2F
Filter Value (Level)	= 0
Cage Code	= 203253313934
Serial Number	= 2DFDC1C35

The binary value is then converted to its hexadecimal notation to transmit the RFID tag number in the ASN document.

Radio Frequency Identification (RFID)



WAWF and RFID

Wide Area Workflow Version 3

File Edit View Favorites

Go

Header | Addresses | Mark For | Comments | Line Item | Pack

Line Item Details:

At least one Line Item is required.

Item No.	Stock Part No.	Type	Qty. Shipped	Unit	Unit Price	Amount	UID	Actions
0001	SS	MG	1	EA	$11,000	$11,000.00	Y	
0002	ada	MG	1	EA	$100	$100.00	N	
0003	sd	MG	10	EA	$500	$5,000.00	N	

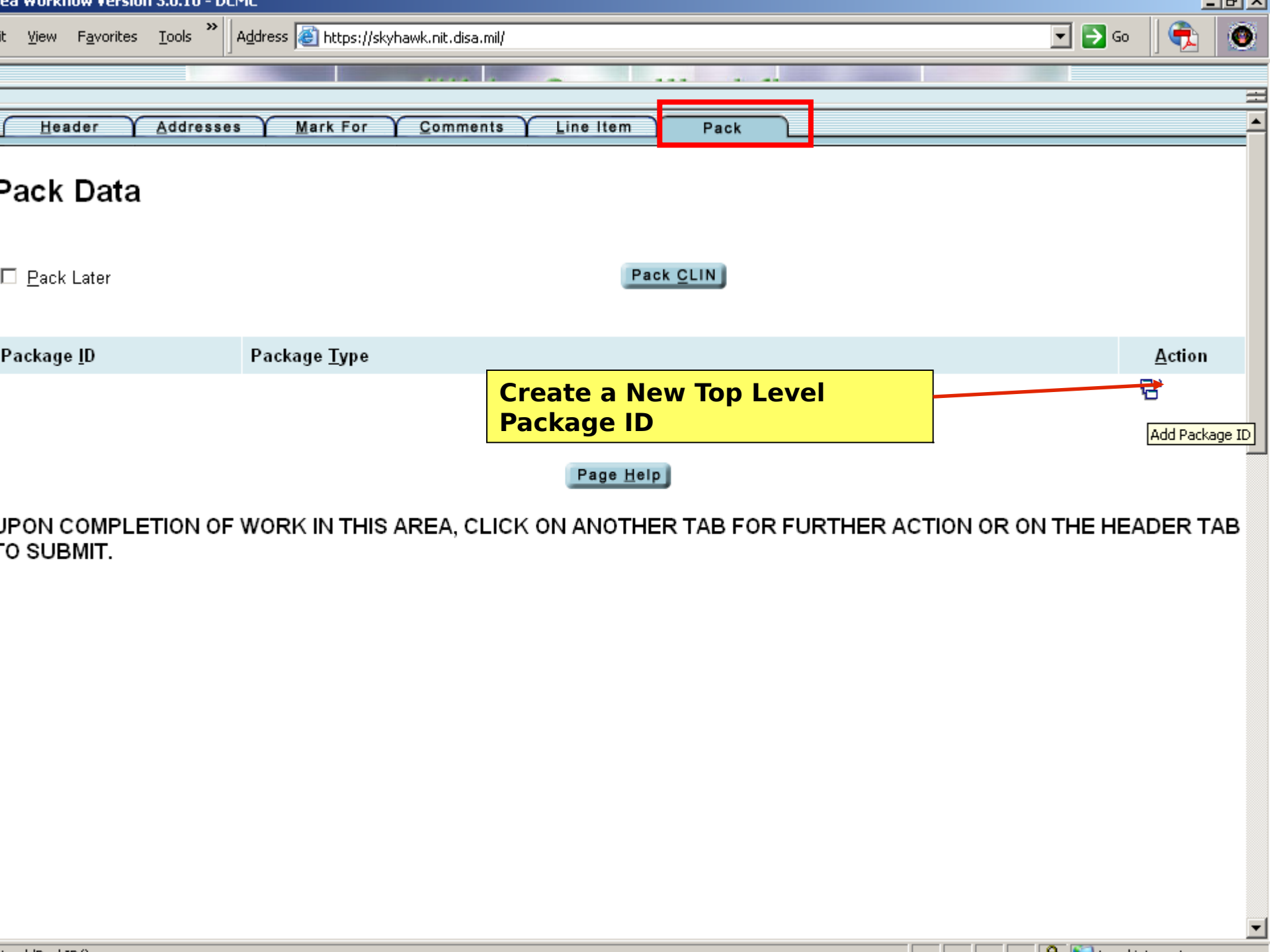
Page Help

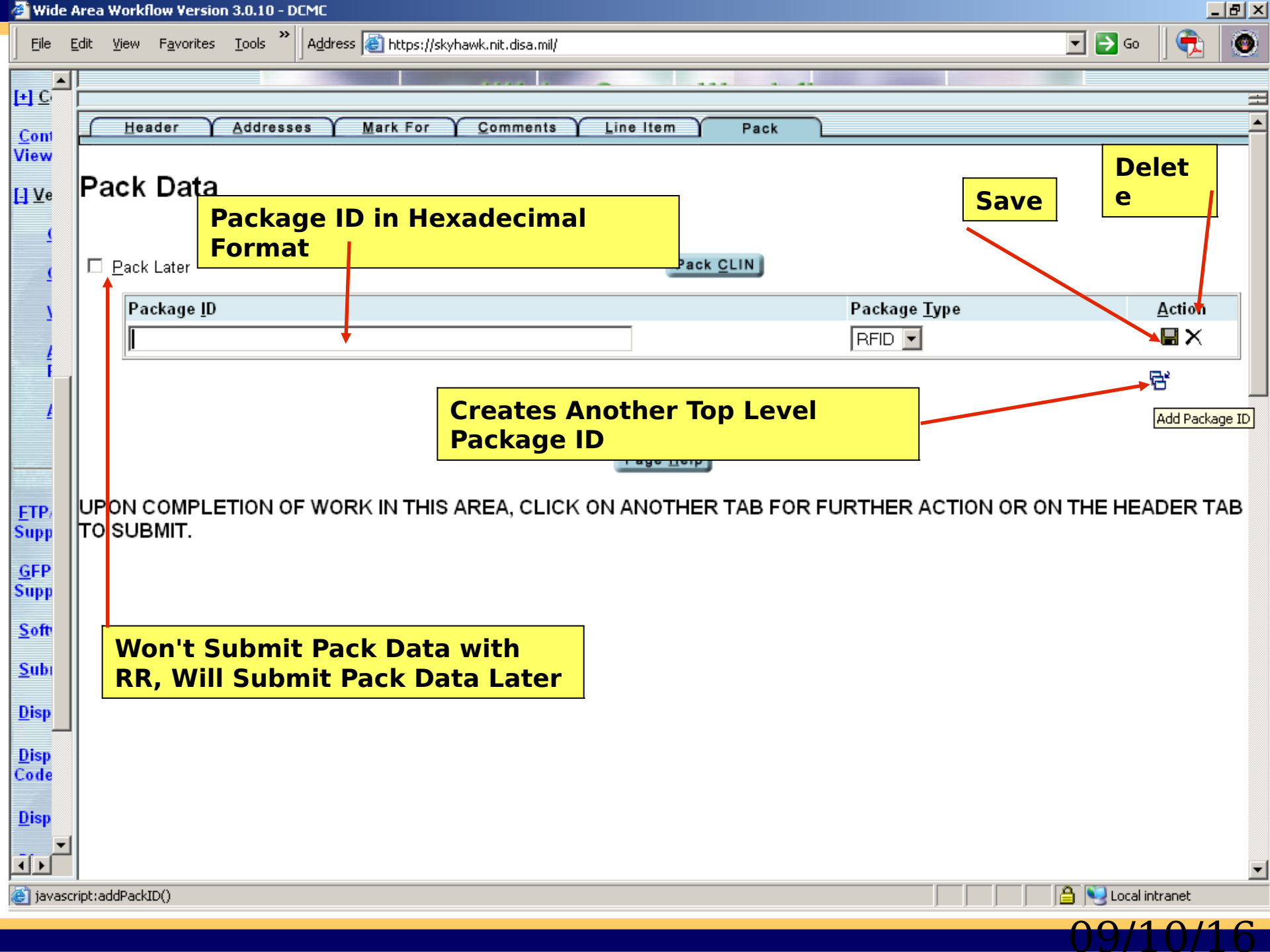
UPON COMPLETION OF WORK IN THIS AREA, CLICK ON ANOTHER TAB FOR FURTHER ACTION OR ON THE HEADER TAB TO SUBMIT.

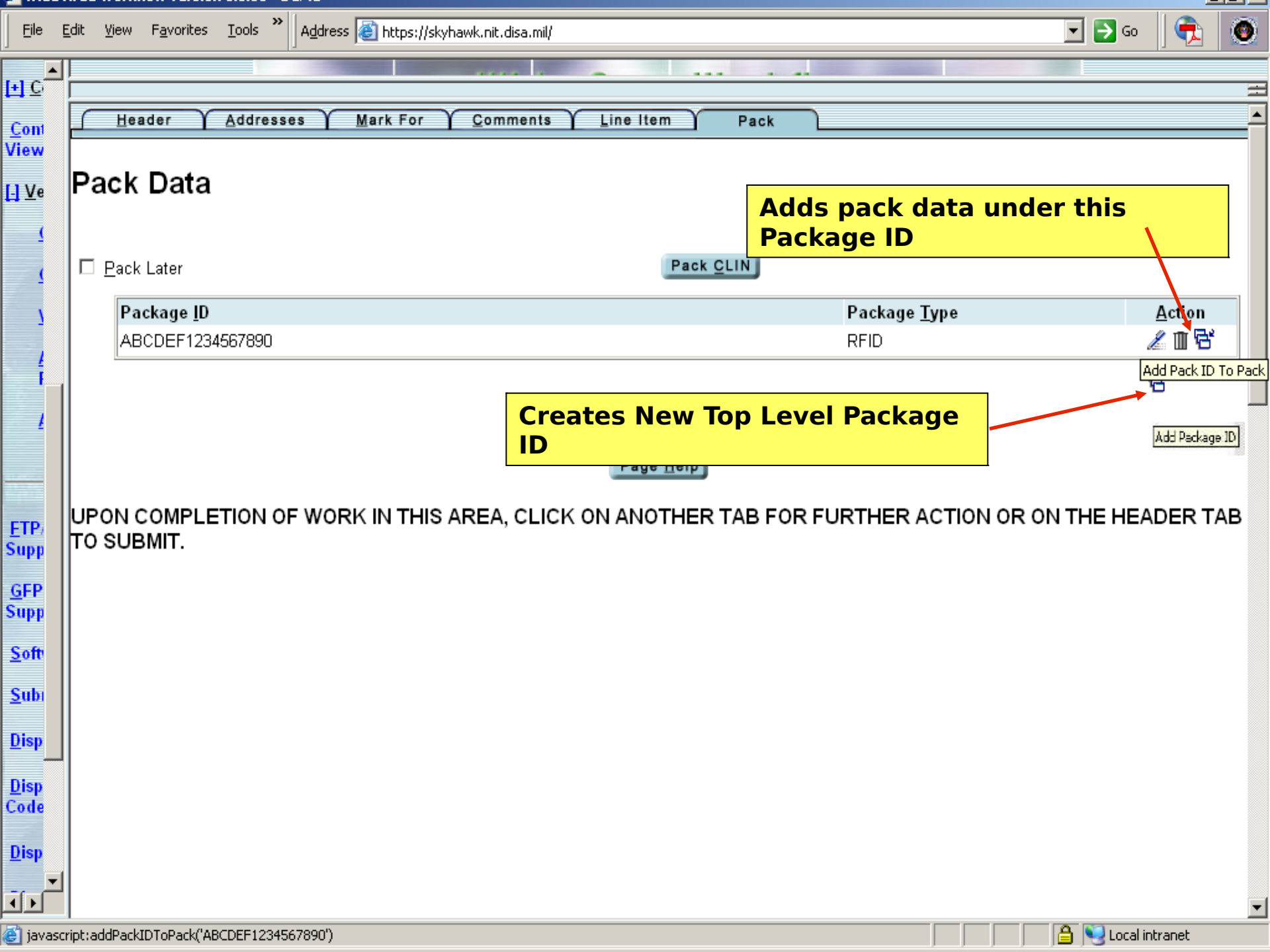
Line Items on RR

Done

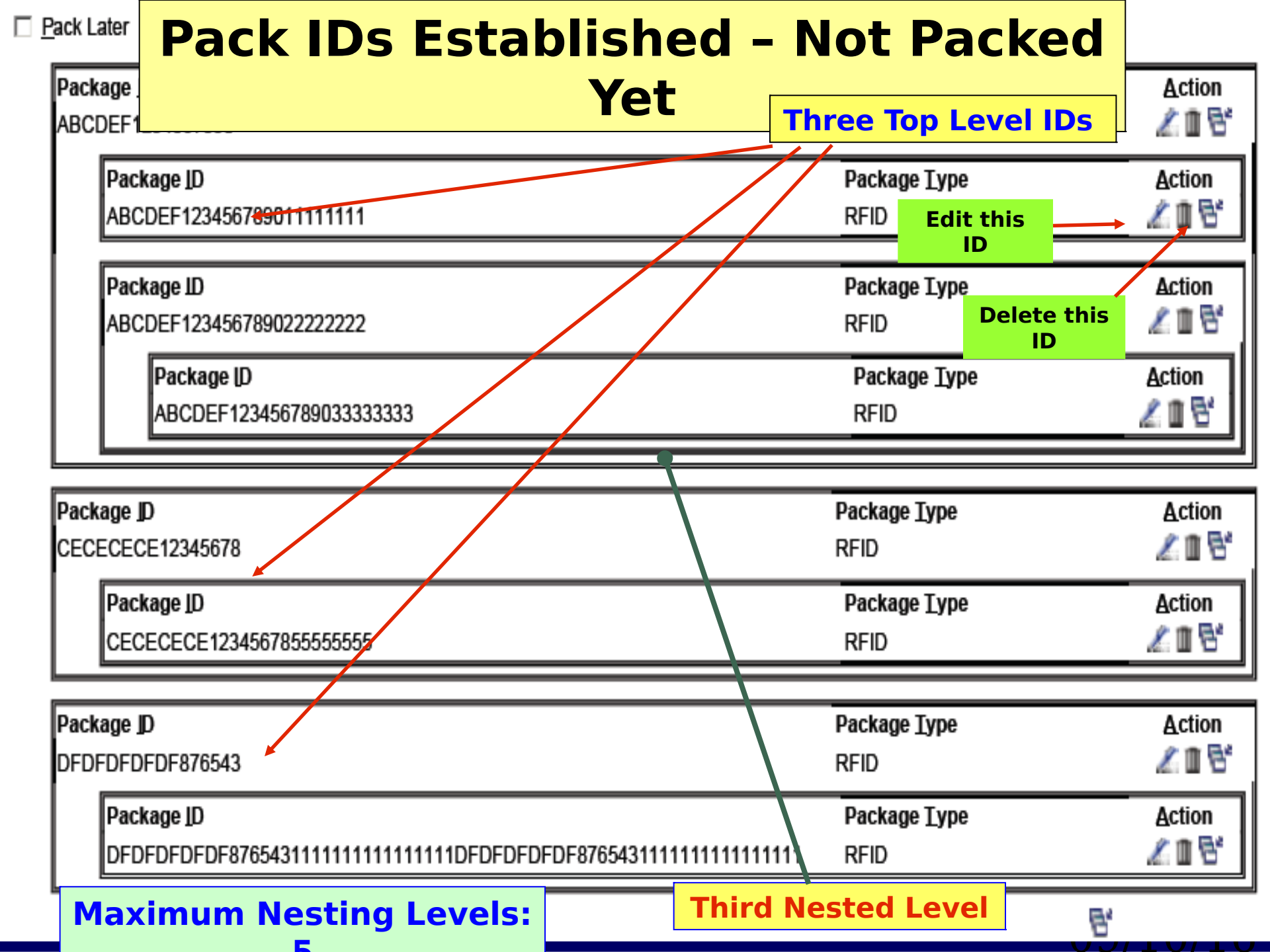
Local intranet


View
Favorites
Tools
Address
https://skyhawk.nit.disa.mil/
Go
Header
Addresses
Mark For
Comments
Line Item
Pack
Pack Data
Pack Later
Pack CLIN
Package ID
Package Type
Action
Create a New Top Level Package ID
Add Package ID
Page Help
UPON COMPLETION OF WORK IN THIS AREA, CLICK ON ANOTHER TAB FOR FURTHER ACTION OR ON THE HEADER TAB
TO SUBMIT.


Wide Area Workflow Version 3.0.10 - DCMC
File Edit View Favorites Tools
Address https://skyhawk.nit.disa.mil/
Go
Header
Addresses
Mark For
Comments
Line Item
Pack
Pack Data
Package ID in Hexadecimal Format
Save
Delet e
Pack Later
Pack CLIN
Package ID
Package Type
Action
RFID
Creates Another Top Level Package ID
Add Package ID
UPON COMPLETION OF WORK IN THIS AREA, CLICK ON ANOTHER TAB FOR FURTHER ACTION OR ON THE HEADER TAB TO SUBMIT.
Won't Submit Pack Data with RR, Will Submit Pack Data Later
javascript:addPackID()
Local intranet


File Edit View Favorites Tools
Address https://skyhawk.nit.disa.mil/
Go
Header
Addresses
Mark For
Comments
Line Item
Pack
Pack Data
Adds pack data under this Package ID
Pack Later
Pack CLIN
Package ID
Package Type
Action
ABCDEF1234567890
RFID
Add Pack ID To Pack
Creates New Top Level Package ID
Add Package ID
UPON COMPLETION OF WORK IN THIS AREA, CLICK ON ANOTHER TAB FOR FURTHER ACTION OR ON THE HEADER TAB TO SUBMIT.
javascript:addPackIDToPack('ABCDEF1234567890')
Local intranet

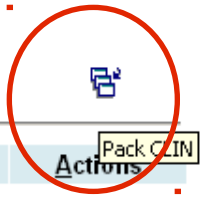
Pack IDs Established – Not Packed Yet



CLIN/SLIN Data

* = Required Fields

Item No.	Stock Part No.	UID	Qty. Shipped	Total Qty. Packed	Difference	Actions
0001	SS	Y	1	0	1	



Item No.	Stock Part No.	UID	Qty. Shipped	Total Qty. Packed	Difference	Actions
0002	ada	N	1	0	1	

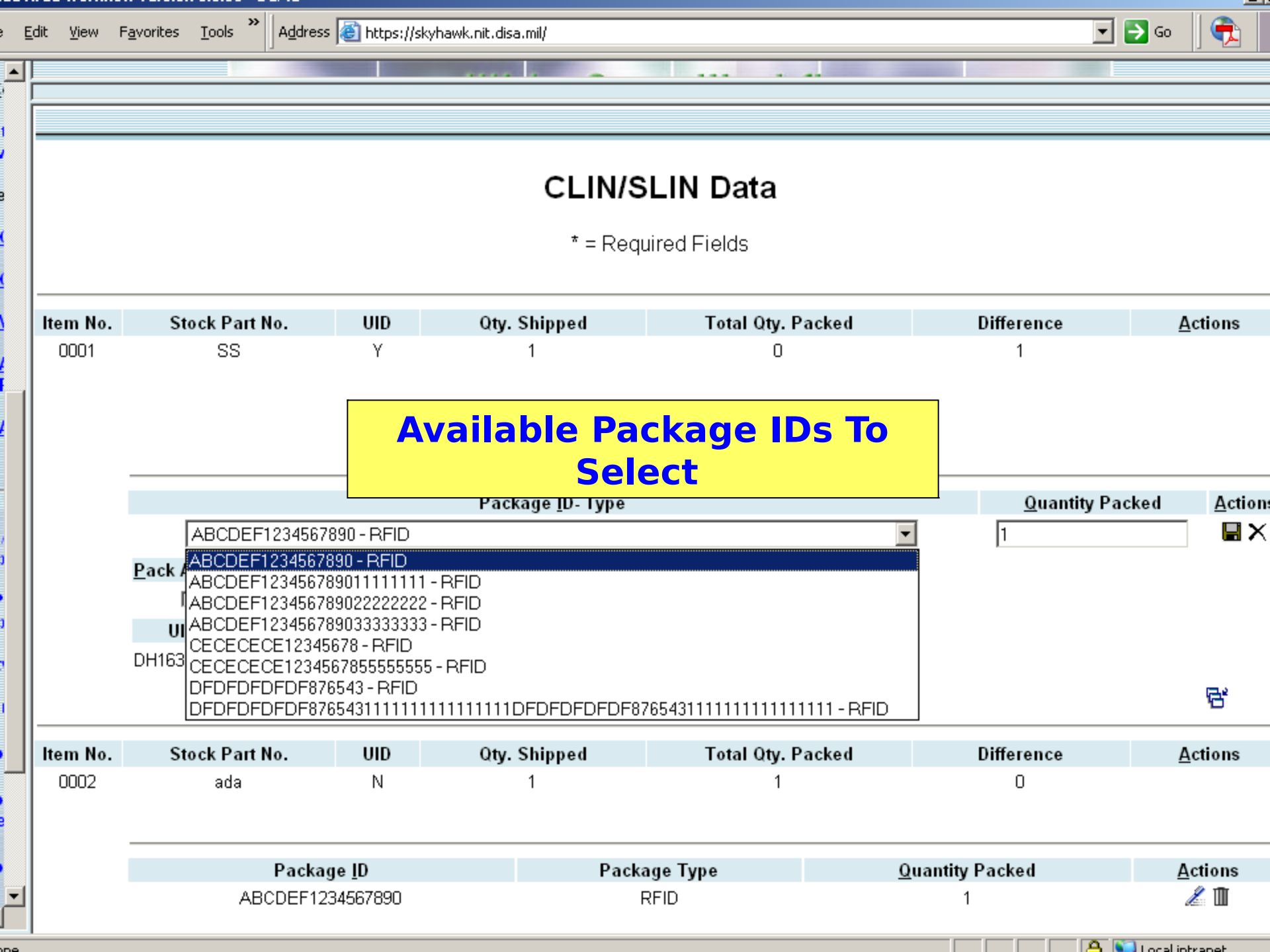
Item No.	Stock Part No.	UID	Qty. Shipped	Total Qty. Packed	Difference	Actions
0003	sd	N	10	0	10	

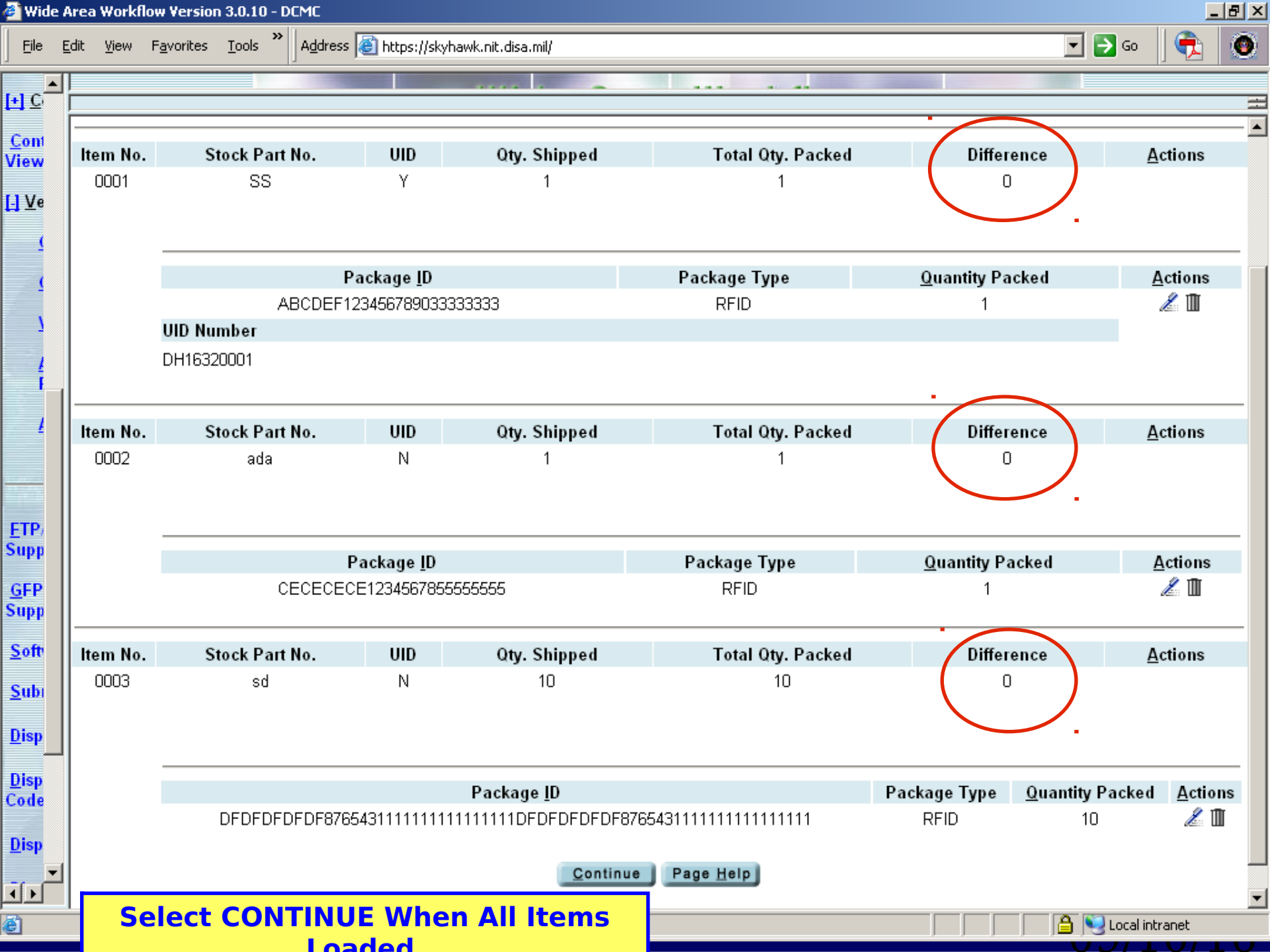
Continue Page Help

UPON COMPLETION OF WORK IN THIS AREA, CLICK ON THE SUBMIT BUTTON TO UPDATE THE PACK STRUCTURE.

javascript:addClinToPackEntry('0001');

Local intranet


Edit View Favorites Tools
Address https://skyhawk.nit.disa.mil/
Go
CLIN/SLIN Data
* = Required Fields
Item No. Stock Part No. UID Qty. Shipped Total Qty. Packed Difference Actions
0001 SS Y 1 0 1
Available Package IDs To Select
Package ID- Type
Quantity Packed
Actions
ABCDEF1234567890 - RFID
1
ABCDEF1234567890 - RFID
ABCDEF123456789011111111 - RFID
ABCDEF123456789022222222 - RFID
ABCDEF123456789033333333 - RFID
CECECECE12345678 - RFID
CECECECE1234567855555555 - RFID
DFDFDFDFDF876543 - RFID
DFDFDFDFDF8765431111111111111111DFDFDFDFDF8765431111111111111111 - RFID
Item No. Stock Part No. UID Qty. Shipped Total Qty. Packed Difference Actions
0002 ada N 1 1 0
Package ID Package Type Quantity Packed Actions
ABCDEF1234567890 RFID 1


Wide Area Workflow Version 3.0.10 - DCMC
File Edit View Favorites Tools
Address https://skyhawk.nit.disa.mil/
Go
Item No. Stock Part No. UID Qty. Shipped Total Qty. Packed Difference Actions
0001 SS Y 1 1 0
Package ID Package Type Quantity Packed Actions
ABCDEF123456789033333333 RFID 1
UID Number
DH16320001
Item No. Stock Part No. UID Qty. Shipped Total Qty. Packed Difference Actions
0002 ada N 1 1 0
Package ID Package Type Quantity Packed Actions
CECECECE1234567855555555 RFID 1
Item No. Stock Part No. UID Qty. Shipped Total Qty. Packed Difference Actions
0003 sd N 10 10 0
Package ID Package Type Quantity Packed Actions
DFDFDFDFDF8765431111111111111111DFDFDFDFDF8765431111111111111111 RFID 10
Continue
Page Help
Select CONTINUE When All Items Loaded
Local intranet

Pack Later

Items Packed.

Pack CLIN ← **Select to Re-Pack**

Package ID	Package Type	Action
ABCDEF1234567890	RFID	

Package ID	Package Type	Action
ABCDEF123456789011111111	RFID	

Package ID	Package Type	Action
ABCDEF123456789022222222	RFID	

Package ID	Package Type	Action
ABCDEF123456789033333333	RFID	

CLIN	Quantity
0001	1

UID Number
DH16320001

Package ID	Package Type	Action
CECECECE12345678	RFID	

Package ID	Package Type	Action
CECECECE1234567855555555	RFID	

CLIN	Quantity
0002	1

Package ID	Package Type	Action
DFDFDFDFDF876543	RFID	

Package ID	Package Type	Action
DFDFDFDFDF8765431111111111111111DFDFDFDFDF8765431111111111111111	RFID	

CLIN	Quantity
0003	10

Supplier Implementation

- **Various strategies may be employed to meet the DoD RFID requirements**
  - **Use third party logistics provider**
  - **Purchase programmed tags and apply to cases/pallets**
  - **Purchase equipment (i.e. printer or reader) to program tags**
  - **Incorporate a full RFID infrastructure throughout business process**
- **The best course of action will depend upon the amount of business with DoD or other customers requiring RFID**

Supplier Implementation

- **Use third party logistics (3PL) provider**
  - **3PL vendor is responsible for:**
    - **Applying RFID enabled tags**
    - **Submitting ASN via WAWF**
    - **Maintaining uniqueness of the RFID number**
  - **3PL vendor may also provide additional services:**
    - **Packaging of material to meet contract requirements**
    - **Transportation management**
    - **Finished goods storage**
    - **Order fulfillment**

Supplier Implementation

- **Purchase programmed tags and apply to cases/pallets (Slap and ship)**
  - **Vendor must certify tag data, uniqueness,**
    and readability
  - **ASN must be transmitted via WAWF**
  - **Labels may contain the MIL-STD-129 markings (MSL) or they may be blank**
  - **Recommended for businesses that are not shipping a significant number of cases to DoD per year and do not intend to utilize RFID technology in house**

Supplier Implementation

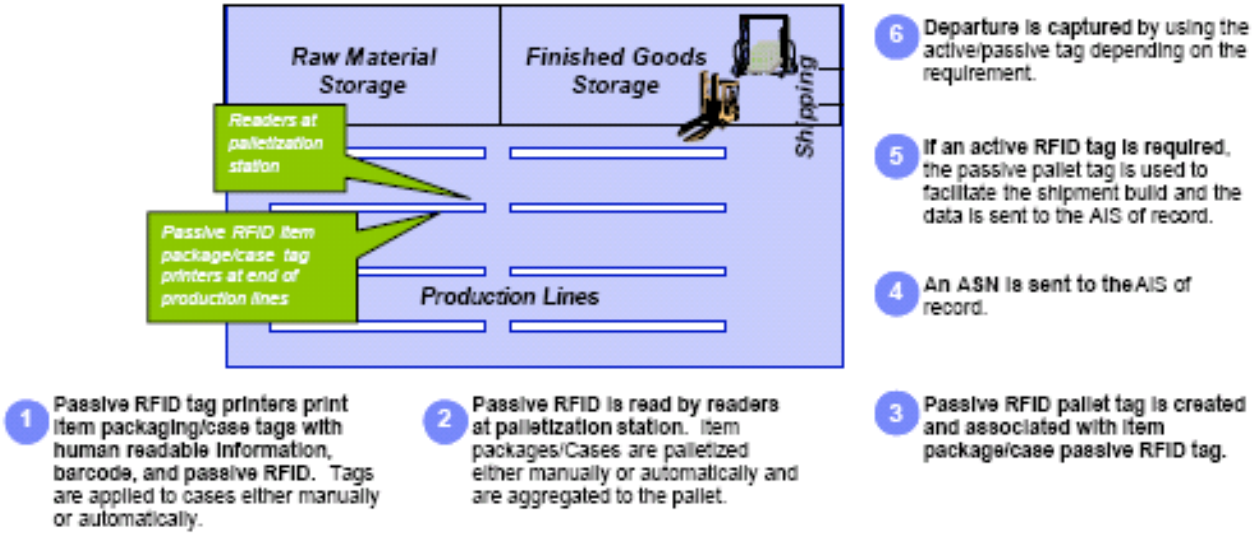
- **Purchase programmed tags and apply to cases/pallets (continued)**
  - **DFARS Clause mandates that the contractor must "use passive tags that are readable."**
  - **Tags verified as readable at the time of purchase may be used at a later date for shipments.**
  - **RFID printers establish readability during the printing process—tags created using an RFID printer do not have to be re-verified.**
  - **A hand-held RFID reader may be used to verify readability.**
  - **RFID tags may be purchased for several contracts—the RFID serial number is not contract specific**

Supplier Implementation

- **Purchase equipment (RFID printer and software) to program tags**
  - **Vendors offer bundled packages (software & hardware) to meet the requirements**
  - **May be able to upgrade existing hardware (label printers) to progra RFID tags**
  - **Requires trained personnel**
  - **Must maintain uniqueness of tag data**

Supplier Implementation

- **Incorporate a full RFID infrastructure throughout business process**
  - **Implement full blown RFID from inbound receiving to outbound shipment**
  - **Obtain or modify existing software and hardware to apply RFID technology**


Raw Material Storage
Finished Goods Storage
Shipping
Readers at palletization station
Passive RFID item package/case tag printers at end of production lines
Production Lines
1 Passive RFID tag printers print item packaging/case tags with human readable information, barcode, and passive RFID. Tags are applied to cases either manually or automatically.
2 Passive RFID is read by readers at palletization station. Item packages/Cases are palletized either manually or automatically and are aggregated to the pallet.
3 Passive RFID pallet tag is created and associated with item package/case passive RFID tag.
4 An ASN is sent to the AIS of record.
5 If an active RFID tag is required, the passive pallet tag is used to facilitate the shipment build and the data is sent to the AIS of record.
6 Departure is captured by using the active/passive tag depending on the requirement.

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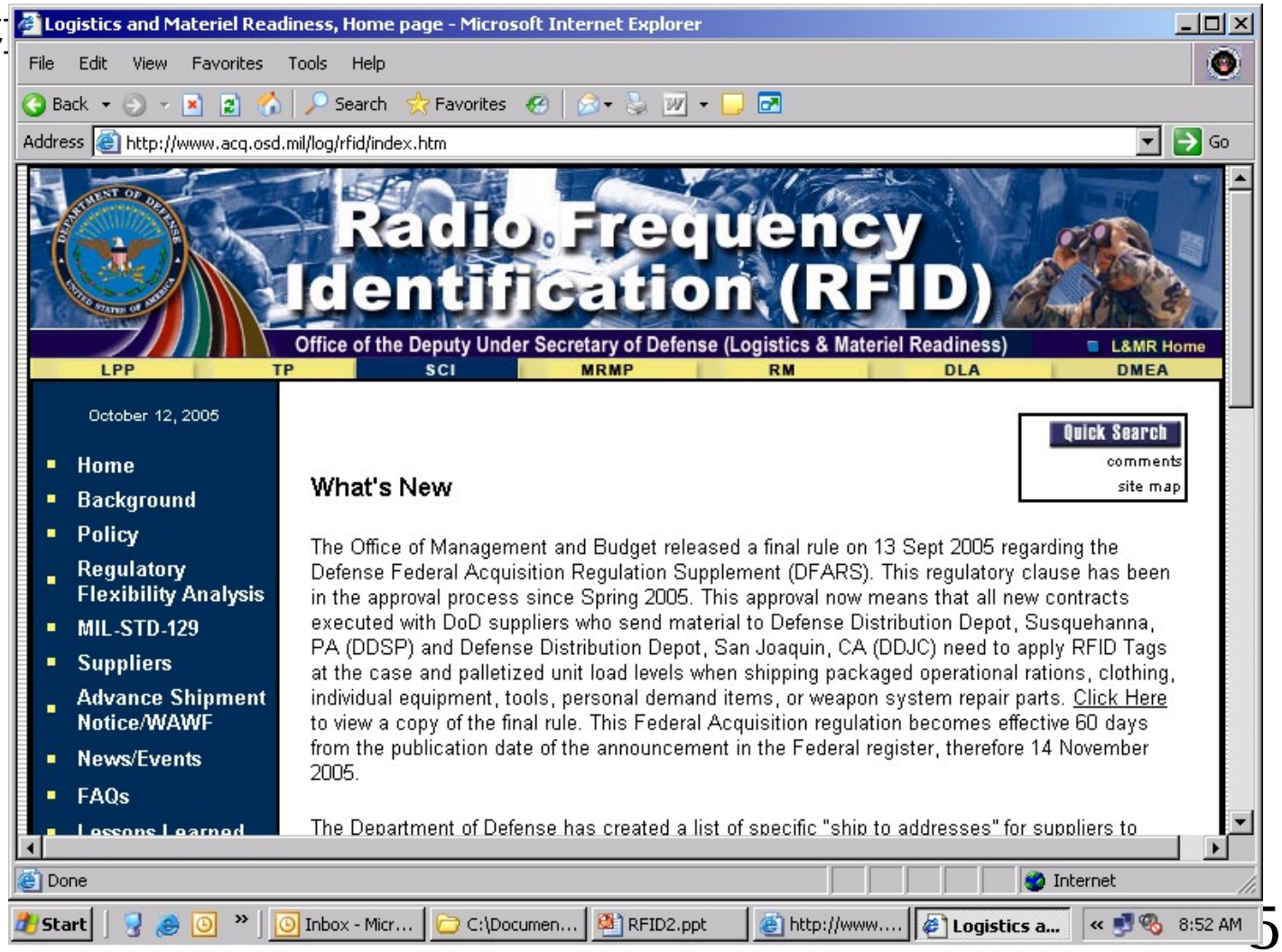
DOD RFID Website

http://www.acq.osd.mil/log/rfid/index.html or
htt


Logistics and Materiel Readiness, Home page - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://www.acq.osd.mil/log/rfid/index.htm
Go
Radio Frequency Identification (RFID)
Office of the Deputy Under Secretary of Defense (Logistics & Materiel Readiness)
L&MR Home
LPP TP SCI MRMP RM DLA DMEA
October 12, 2005
Home
Background
Policy
Regulatory Flexibility Analysis
MIL-STD-129
Suppliers
Advance Shipment Notice/WAWF
News/Events
FAQs
Lessons Learned
Quick Search
comments
site map
What's New
The Office of Management and Budget released a final rule on 13 Sept 2005 regarding the Defense Federal Acquisition Regulation Supplement (DFARS). This regulatory clause has been in the approval process since Spring 2005. This approval now means that all new contracts executed with DoD suppliers who send material to Defense Distribution Depot, Susquehanna, PA (DDSP) and Defense Distribution Depot, San Joaquin, CA (DDJC) need to apply RFID Tags at the case and palletized unit load levels when shipping packaged operational rations, clothing, individual equipment, tools, personal demand items, or weapon system repair parts. Click Here to view a copy of the final rule. This Federal Acquisition regulation becomes effective 60 days from the publication date of the announcement in the Federal register, therefore 14 November 2005.
The Department of Defense has created a list of specific "ship to addresses" for suppliers to
Done
Internet
Start
Inbox - Micr...
C:\Documen...
RFID2.ppt
http://www....
Logistics a...
8:52 AM

Bye-Bye Bar Codes? – NO!

- **Traditional bar codes – Linear (UPC, 3 of 9)**
  - **Will remain the dominant auto ID technology in most mainstream applications for the foreseeable future**
  - **Lowest cost, broadest applicability, huge infrastructure investment**
- **2D bar codes – Data Matrix, PDF417**
  - **Adopted for value added applications**
  - **Portable data files, supplementary retail coding etc.**
- **RFID – Active, Passive and Semi Passive**
  - **Will be increasingly adopted where non-line of sight, read/write, and multiple detection requirements are needed.**

UID vs. RFID

- Unique Identification
- Item Markings
- DFARS Clause 252.211-7003
- MIL-STD-130
  - Linear Bar Code 39
  - Data Matrix 2-D Bar Code
- Applied to items $5000 and over (or mandated by contract)
- Used to identify items in various databases (like a SS#)

- Radio Frequency Identification
- Packaging Markings
- DFARS Clause 252.211-7006
- MIL-STD-129
  - RFID chip embedded in paper label
- Applied based on destination and item supply class
- Used to track packages in transportation (like a license plate)

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SUMMARY

- **Passive RFID is required when all three of the following conditions exist:**
  - **The RFID DFARS Clause is specified in the contract**
  - **Items are in Item Supply Class I (Rations), Class II, Class IIIP, Classes IV and VI, Class VIII (excluding pharmaceuticals, biologicals or reagents), or Class IX, AND**
  - **Shipments are being sent to one of the specified destinations**
- **Passive RFID labels are to be placed on exterior shipping containers (cases) and palletized unit loads**
- **RFID data must be submitted via an Advance Shipment Notice—generally via Wide Area Workflow**

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Quiz

1. **Which of the following are components of an RFID system?**

   a) Antennas

   b) RFID tags

   c) RFID interrogators

   d) Host computer with software

   e) All of the above

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Quiz

2. **Which of the following is NOT a characteristic of passive RFID transponders (tags).**

   a) Carry a limited amount of data

   b) Have an internal battery

   c) Can be incorporated into a shipping label

   d) Are generally inexpensive, costing around $1.00

Quiz

3) **Which of the following shipments will require passive RFID tags?**

a) **The item is Class IX, the shipment is TP 1, destination is Balad Airbase, Iraq (W917YX)**

b) **MIL-STD-129P Change Notice 3 is specified in the contract, item is Class IX, destination is New Cumberland (W25G1U)**

c) **DFARS Clause 252.211-7006 is in the contract, item is ammunition (Class V), destination is New Cumberland (W25G1U)**

d) **DFARS Clause 252.211-7006 is in the contract, item is Class IIIP petroleum product, destination is Tracy, CA (W62G2T)**

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Quiz

4. **A contractor has a shipment going to New Cumberland, PA which requires passive RFID labels. The shipment consists of 36 exterior shipping containers consolidated onto two pallets. How many RFID tags (labels) will be needed for this shipment?**

   a) 36

   b) 2

   c) 38

   d) 40

Quiz

5. **Where is RFID data submitted in Wide Area Workflow (WAWF)?**

   a) Under the Line Item tab

   b) Under the UID tab

   c) Under the Pack tab

   d) Under the Mark For tab